






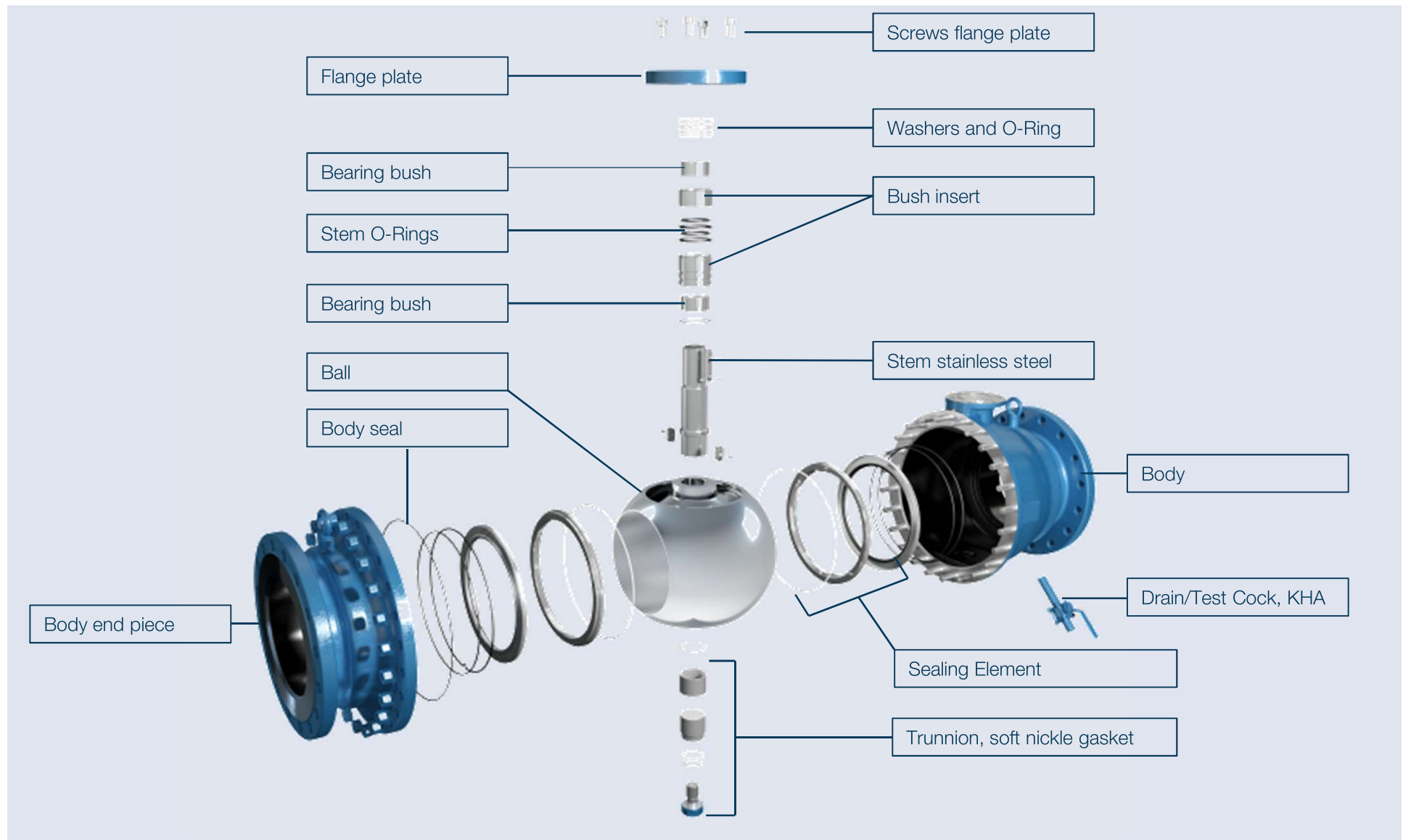
BALLOSTAR® KH(SV)I 2 PIECE BALL VALVE



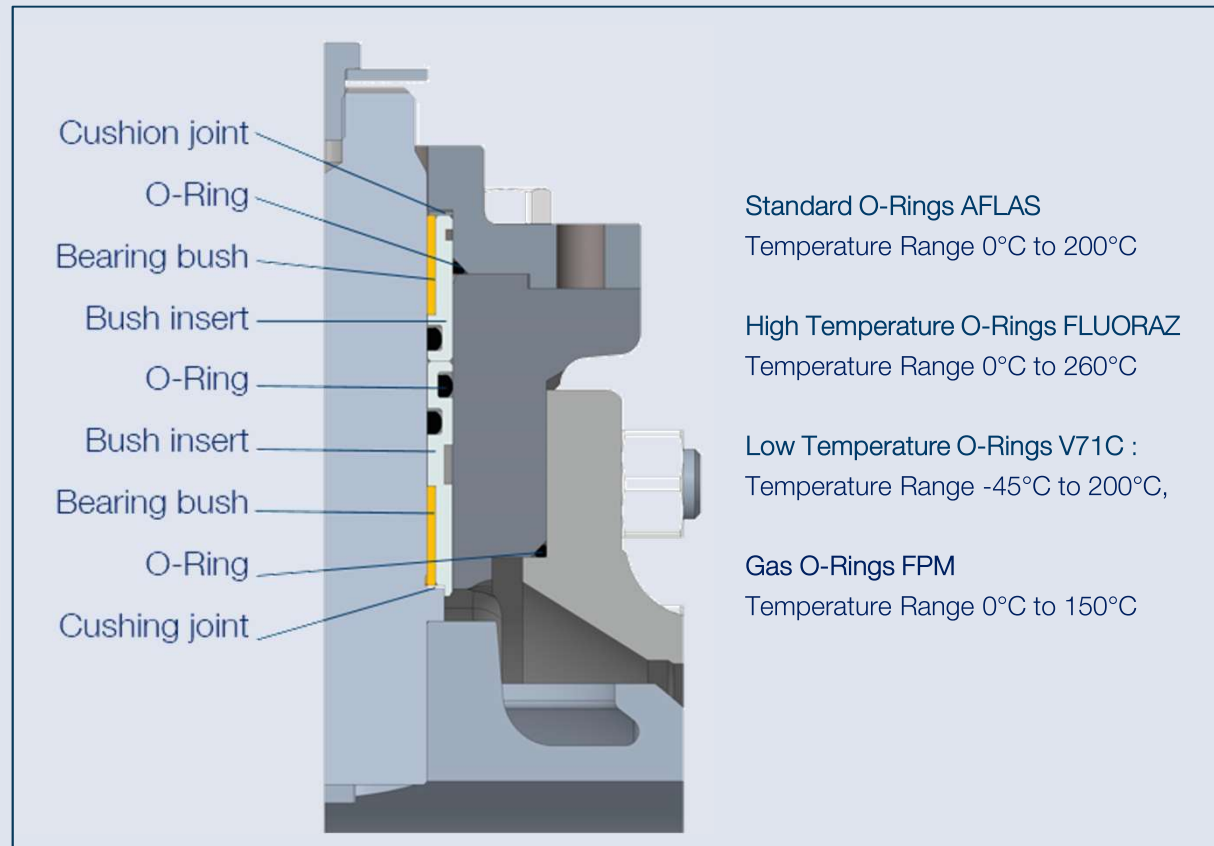
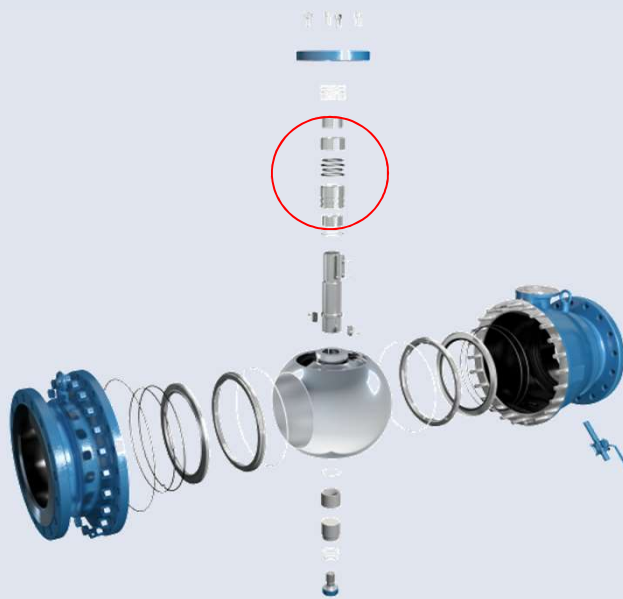
VARIANTS

Model	DN	PN	Connection	Face to Face	Body Material	°C	General
 KHI full bore	150-800	25,40	Flanged EN1092-1	EN558-1, Series 12	1.0619 1.4408 (until DN500)	Acc. P/T diagram	High Temperature Version until +260°C Low Temperature Version -45°C to +200°C Ball trunnion mounted Trunnion 1.4104 /1.4401 Ball EN-JS1030Fe/Cr30f,mt/ 1.4408 Stem 1.4104 Painting carbon steel body: Hydrolux KH / Hydrodur Pre -treatment: Metallic bright, free of dust and grease, free of loose adhesions Base coat 1K alkyd resin (AK) Layer thickness 30µm Top coat 2K alkyd resin (AK) Layer thickness 40µm Colour KH(SV): Material VIII Sky blue RAL 5015 Available certificates: BAM Oxygen EN488:2019 for KHSVI VWS Fire Safe Certificate acc. API 607/EN10497 DBB Confirmation Gas Certificate TA Luft/VDI2440 Certificate SIL 2 Approval
 KHI reduced bore	150/125 to 300/250	25,40	Flanged EN1092-1	EN558-1, Series 27	1.0619 1.4408		
 KHSVI full bore	150-1000	25,40	Weld Ends (on demand)	EN12982 Series 63 and ANSI B16.10 CL300	1.0619		
 KHSVI reduced bore	300/250 to 800/700	25,40	Weld Ends (on demand)	EN12982 Series 63 and ANSI B16.10 CL300	1.0619		
 KHSVI – VWS full bore Fully welded	150-800	25,40	Weld Ends (on demand)	EN12982 Series 63 and ANSI B16.10 CL300	1.0619		

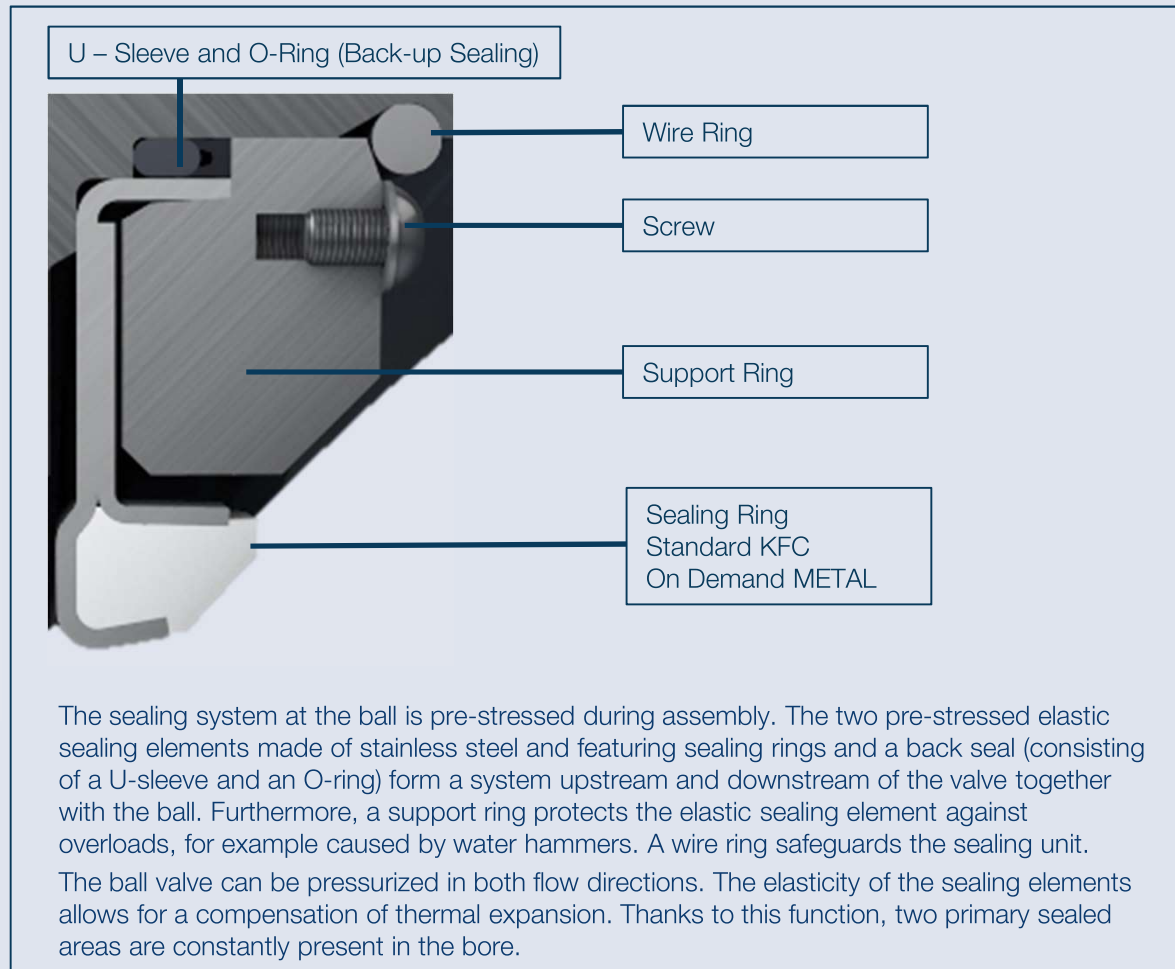
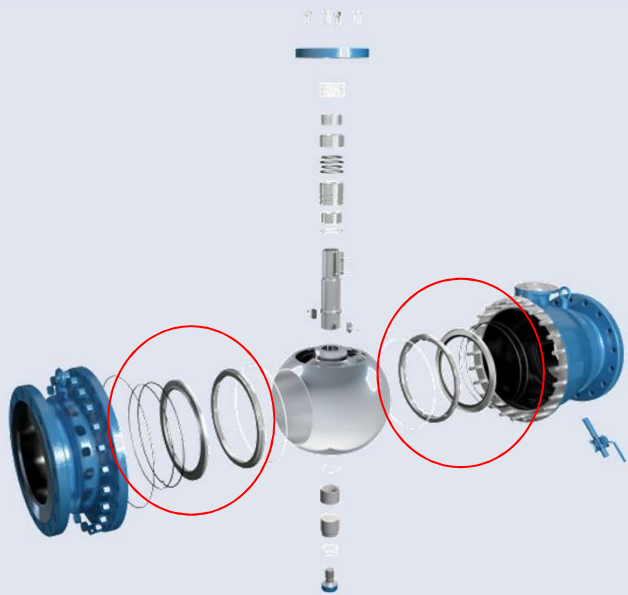
CONSTRUCTION



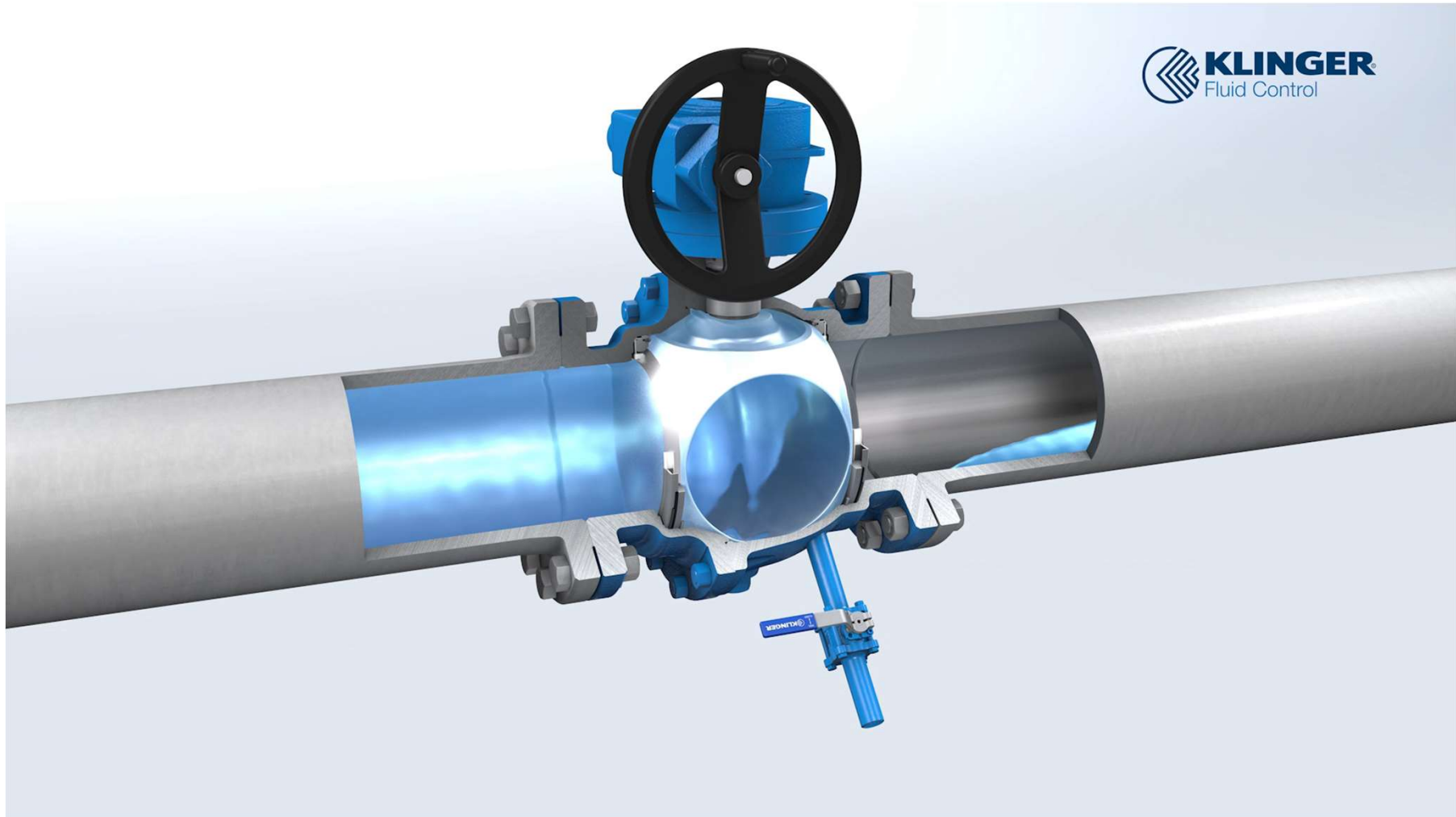
STEM O-RINGS



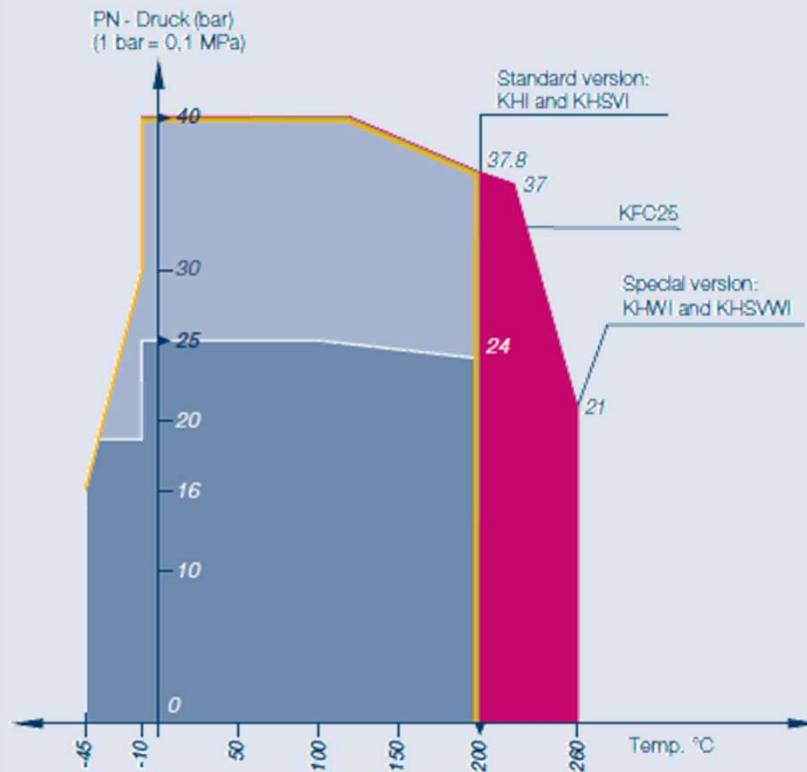
SEALING ELEMENT



SEAT SEALING



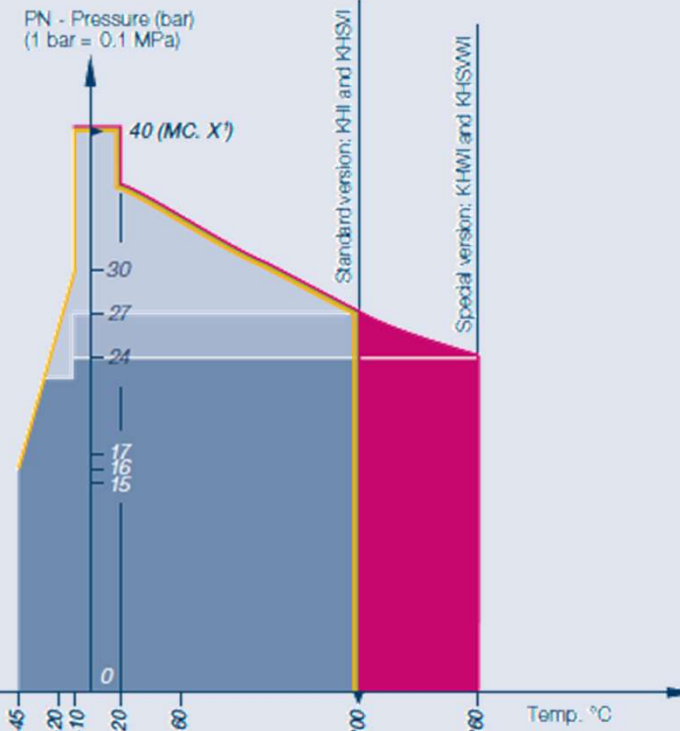
P/T DIAGRAM



O-Rings: AF
O-Rings: 799 Fluoraz, spiral wound gasket
O-Rings: V71C
Stud screws 8.8
Stud screws A4-70 - PN 25
Stud screws 42CrMo4

Steel casting

Material code: Vll



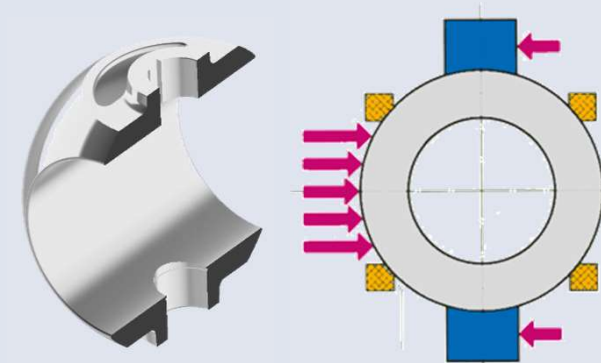
O-Rings: AF
O-Rings: 799 Fluoraz, spiral wound gasket
O-Rings: V71C
Stud screws 8.8
Stud screws A4-70 - PN 25

Stainless steel casting

Material code: Xc, X

THE BALL

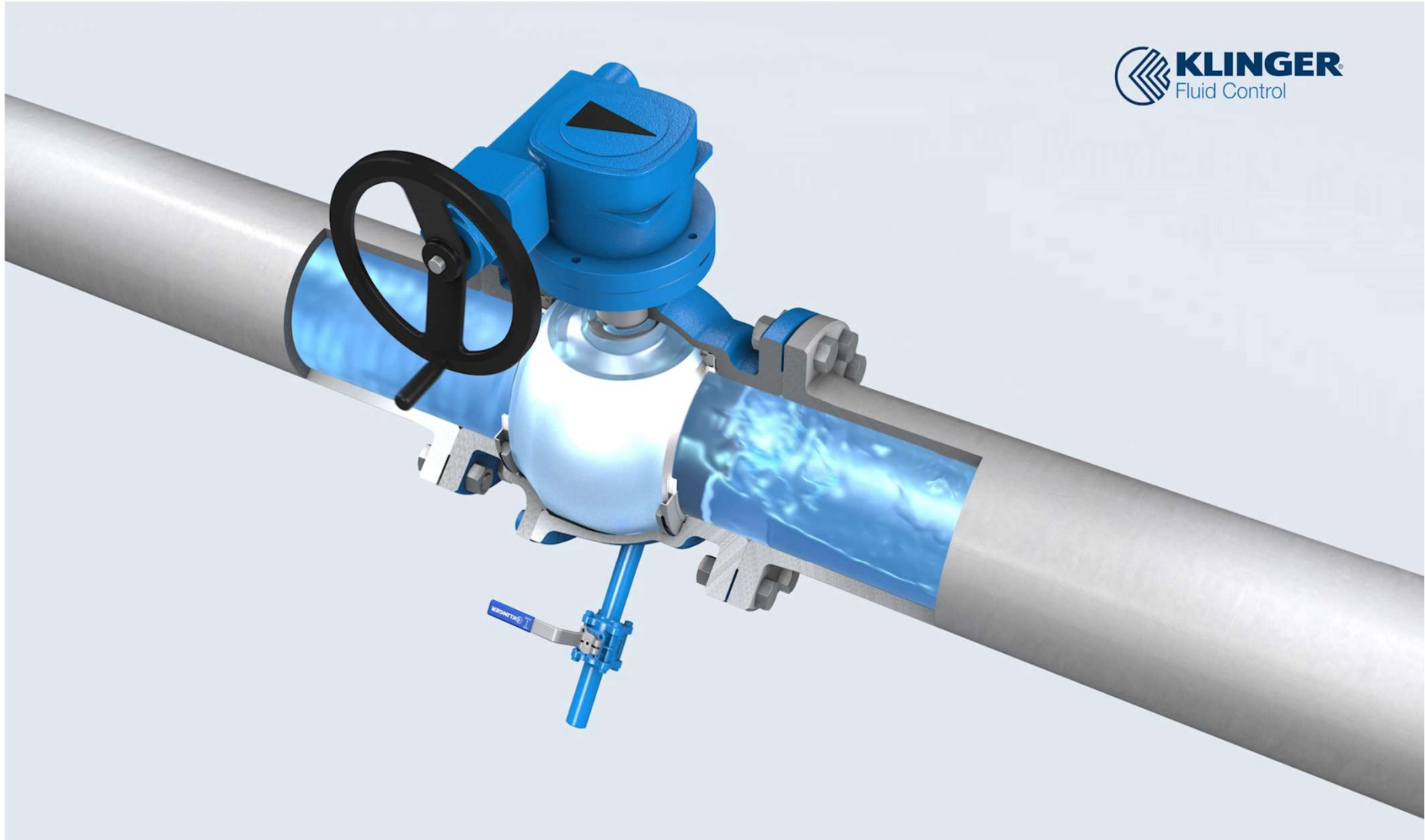
	Execution	Hardness	Surface roughness (RZ)
KLINGER®	Ductile graphite iron ball chrome plated	800 – 1000 HV	0,6 µm
Competitor	Nickel plated	500 – 650 HV	5,6 µm
	Stainless steel	300 – 350 HV	3,5 µm



Customer benefits:

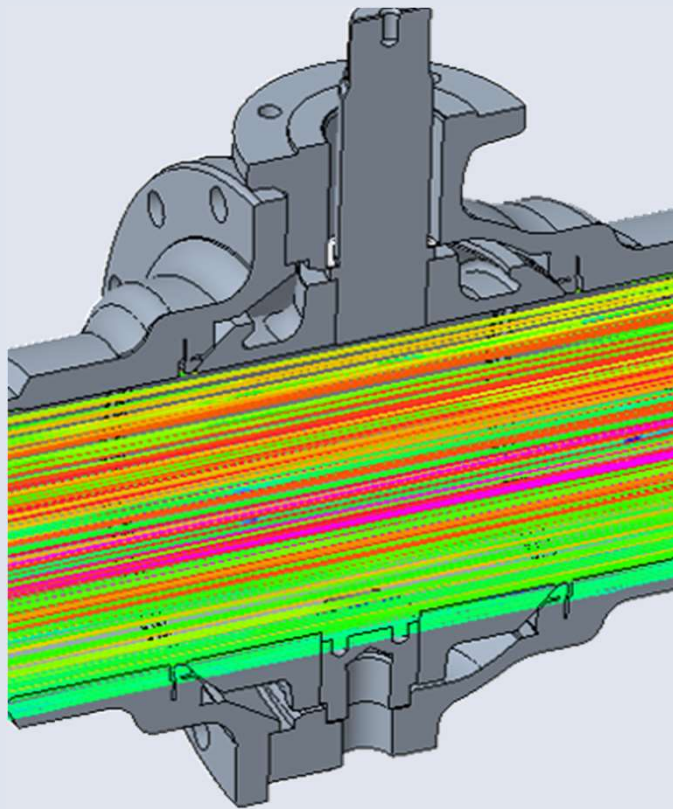
- » The high hardness of chrome makes the ball insensitive to mechanical impact, e.g. solids in the medium, and is therefore scratch-resistant and resistant to damage to the ball surface.
- » The chrome layer also makes the ball resistant to pressure shocks and temperature changes during operation.
- » The low surface roughness prevents media particles from sticking to the surface of the ball (stuck particles on the ball can damage the sealing seat of the valve during the switching process).
- » The high wear resistance of the chrome layer considerably increases the service life of the valve and is therefore particularly suitable for many switching cycles.
- » Lubricants are distributed on the smooth surface due to the high non-stick properties, which contributes to the better running characteristics of the ball. The extremely smooth ball surface is also achieved by the good polishability of chrome.
- » Chrome also offers the greatest possible protection when using chemical and abrasive media and is therefore acid and rust resistant.
- » Due to the perfect hardness property of chrome on the ball, the valve can be used for a variety of critical and demanding media

DOUBLE BLOCK & BLEED

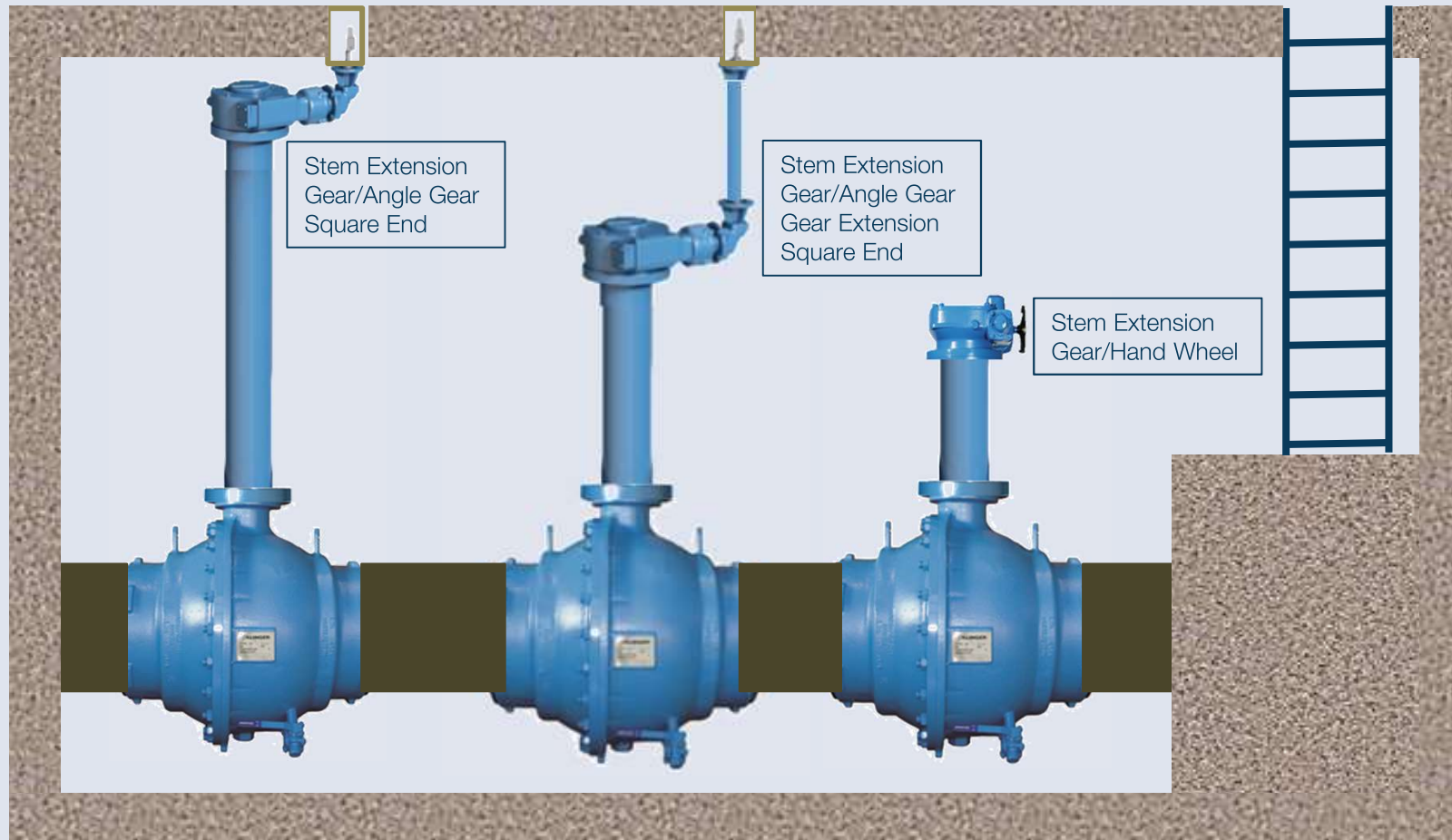


PRESSURE LOSS

Due to the construction and straight inner geometry, the KH(SV)I full bore supports laminar flow, prevents turbulences and ensures low pressure drop and max. flow rate in comparison with other types of valves.

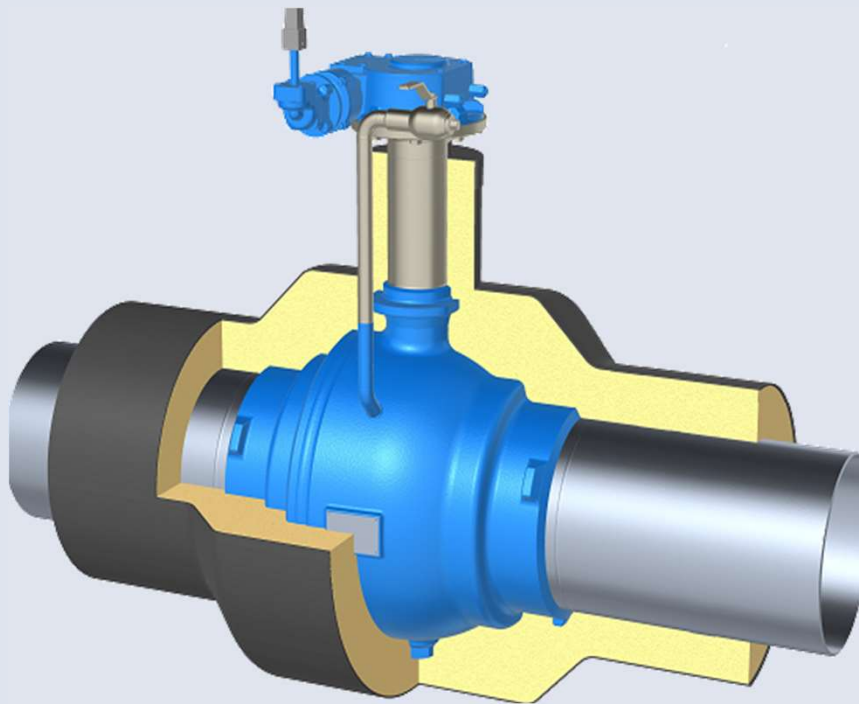


GEAR & STEM EXTENSIONS

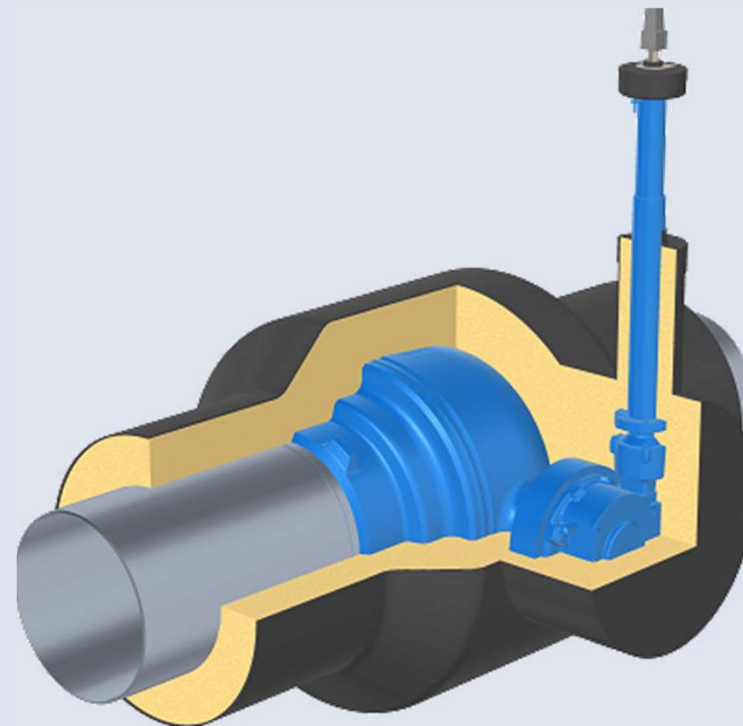


UNDERGROUND INSTALLATION

KHSVI Fully Welded EN488
With or without Drain/Test valve
Body Extension
Isolation Extension EN488
AUMA Gear and Angle Gear with square end
HDPE Jacket Isolation Class 2



KHSVI Fully Welded EN488
Body Extension
Isolation Extension EN488
ROTORK Gear Side Installation
With Gear Extension adjustable with square end
HDPE Jacket Isolation Class 2

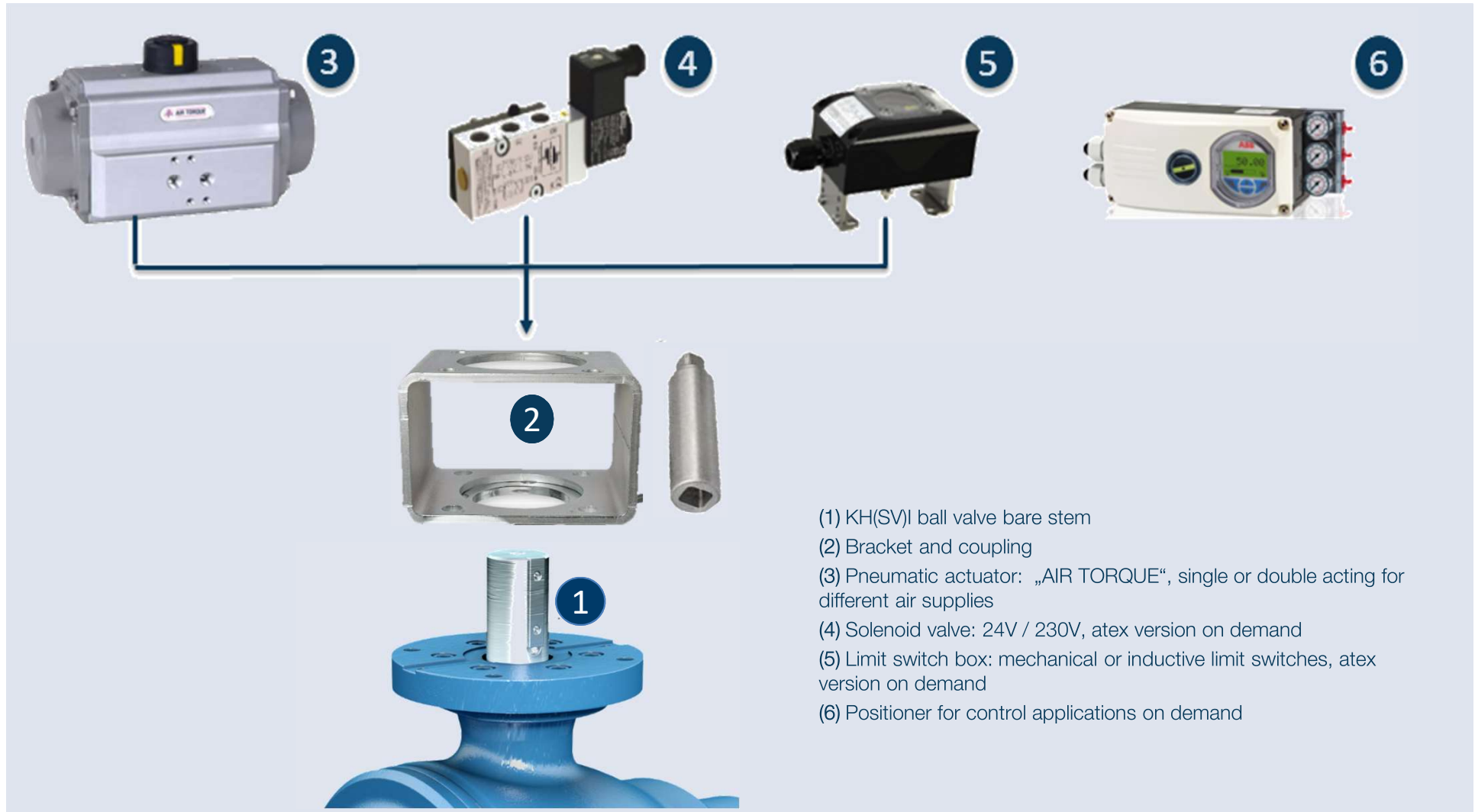


AUMA AUTOMATION KH(SV)I



- (1) Stem of KH(SV)I with feather key (DN250 to 1000). DN150 and DN200 with square end.
- (2) Connection plate acc. ISO5211 (line size 250 to 1000) to connect gear with valve. F size of connection plate and actuator must match. For sizes DN150 and 200 a connection flange in different F Sizes will be used.
- (3) Plug-in coupling with serration and feather key connection.
- (4) Mech. gear AUMA type "GS"
- (5) El. Mech. Actuator AUMA type "SA", "SAR" or "SAExC".
- (6) Actuator control AUMA type "AM" or "AC".
- (7) Complete AUMA unit: mech. Gear + actuator + actuator control

AIR TORQUE AUTOMATION KH(SV)I



TESTING ACC. EN12266-1, P10, P11, P12



Test	Test Duration		Test pressure and media
	DN 15 – 150	DN 200 – 300	
P10 (Strength)	1 Minute	2 Minutes	1,5x PN Water
P11 (Tightness)	1 Minute	2 Minutes	1,5x PN Water
P12 (Seat Tightness)	1 Minute	2 Minutes	6 bar ± 1bar Air or 1,1x PN Water

CERTIFICATION



EN 488:2019 KHSVI VWS

KLINGER Ballostar® KHSVI VWS ball valves, DN 150 to 800, have been successfully tested and certified by the TÜV Austria under inclusion of the extended requirements of the EN 488:2019.

Fire Safe

The Fire Safe tests in accordance with API Standard 607, 4th Edition and EN ISO 10497:2004 have been certified by Lloyd's Register and TÜV Austria respectively

Approval of the KHI sealing chamber

The KLINGER Ballostar® KHI represents a safe shut-off for the operation of steam boilers in the sense of item 6231 TRD 601 B12.

Gas approval

ÖVGW Certificate for authorization to display the ÖVGW quality label "Gas" for the ball valves GKHI, GKHSVI and GKHSVI VWS, DN 150 - 800.

Utilization for gaseous oxygen

The BAM Berlin has granted its approval for the ball valve series Ballostar® KHI in utilization scenarios with gaseous oxygen at operating pressures of up to 16 bar and operating temperatures of up to 60 °C.

Emission testing in accordance with VDI 2440

Certified emission testing pursuant to VDI 2440 for Ballostar® KHI / KHSVI ball valves at temperatures < 250 °C.

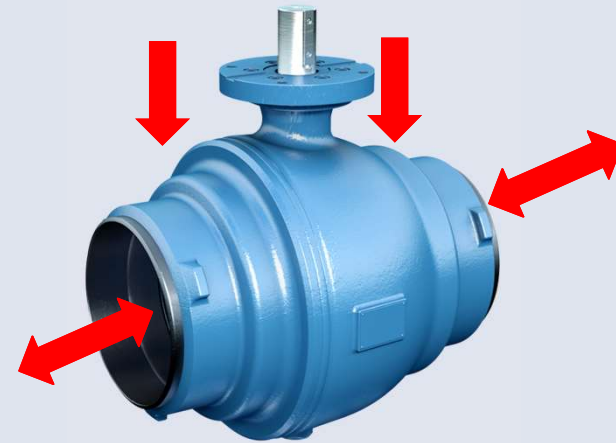
Pressure Equipment Directive 2014/68/EU

The Ballostar® KHI, KHSVI and KHSVI VWS ball valves are developed, produced, tested and delivered in accordance with the valid standards of the Pressure Equipment Directive 2014/68/EU.

EN488:2019 CERTIFICATE KH(SV)I



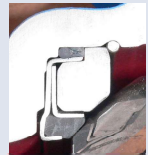
Test with compressive, tensile and bending forces



In order to increase operational safety, the requirements regarding buried shut-off valves are constantly increased. Meeting these requirements is achieved through the utilization of special valves with particularly rigid and deformation-free bodies. The corresponding technical requirements and test methods for shut-off valves directly buried within district heating networks are defined in the EN 488. Increased compressive forces as well as new bending movements for valves were already defined in the 2011 predecessor version of the standard. The tensile forces, however, remained unchanged. Compared to 2011, some requirements have now again been made stricter. The number of operations during the type approval test, for example, has been increased and all tests must be carried out on the same valve. Furthermore, the end of the last 100 mm of the spindle / shaft construction must feature corrosion protection.

KLINGER Ballostar® KHSVI VVS ball valves are successfully tested and certified by the TÜV Austria on the company-own multi-function test stand under inclusion of the expanded requirements of EN 488:2019.

KH(SV)I DN150 – 800 ADVANTAGES



Sealing System	Elastic Sealing System for high temperatures (→260°C) Due to sealing system / trunnion mounted ball → low torque → bidirectional flow Sealing construction → insensitive to impurities → metal seats available Valid for abrasive medias
Ball	Ductile graphite iron ball with chrome coating (30µm) Very corrosion resistant → Scratch proof Chrome Layer harder than ANY stainless steel ball → resistant against solids No turbulences → cylindrical passage
Body	Compact casted construction → insensitive to pipe forces Pneum. and electr. Actuators possible to install → Connection acc. ISO 5211 Installation in any position possible → bidirectional flow Fully Welded version available → no different weldings on housing Drain/Test cock available
Quality	Maintenance free Long service life (min. 20 -25 years) Stem Sealing could be changed inline Leakage rate A → tested acc. EN12266-1 DB&B → maximum safety → TÜV confirmed
EN488	Fulfill the latest version acc. EN488:2015 Certification acc. EN488:2015 Preisolated with HDPE jacket on demand

APPLICATION DISTRICT HEATING



APPLICATION PRE - ISOLATED



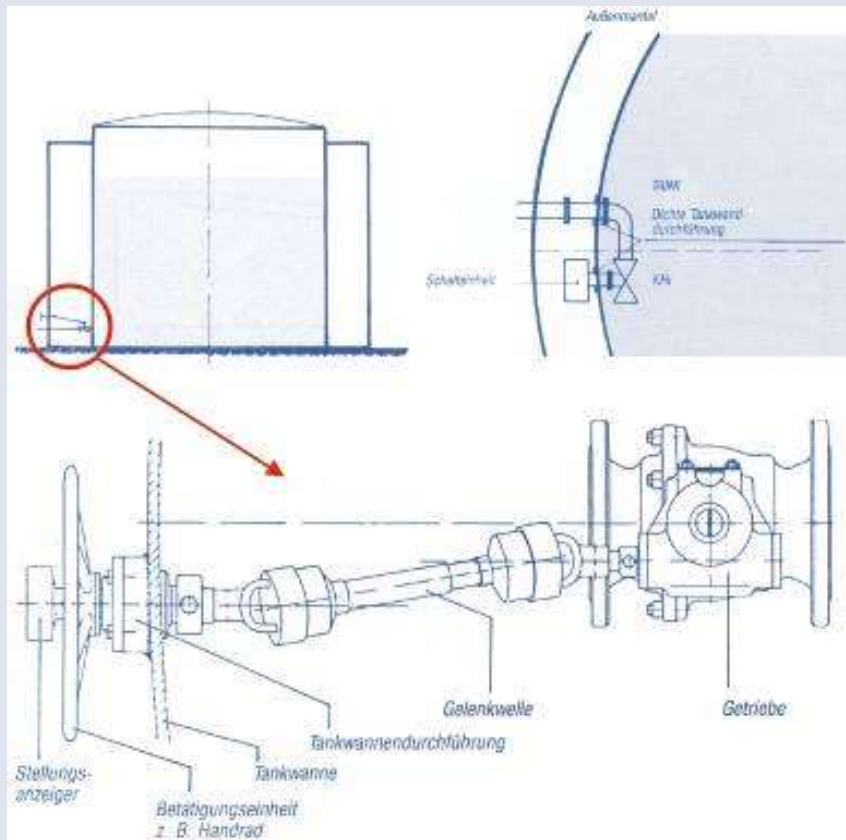
APPLICATION: MINING INDUSTRY

Civil Engineering/Mining Industry / Bentonite Injection



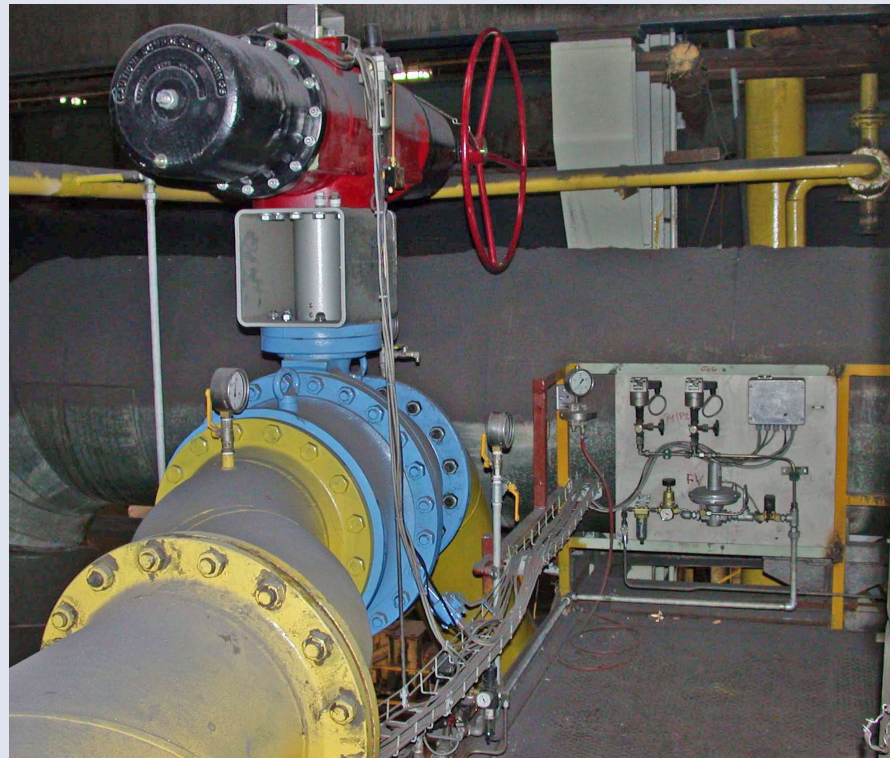
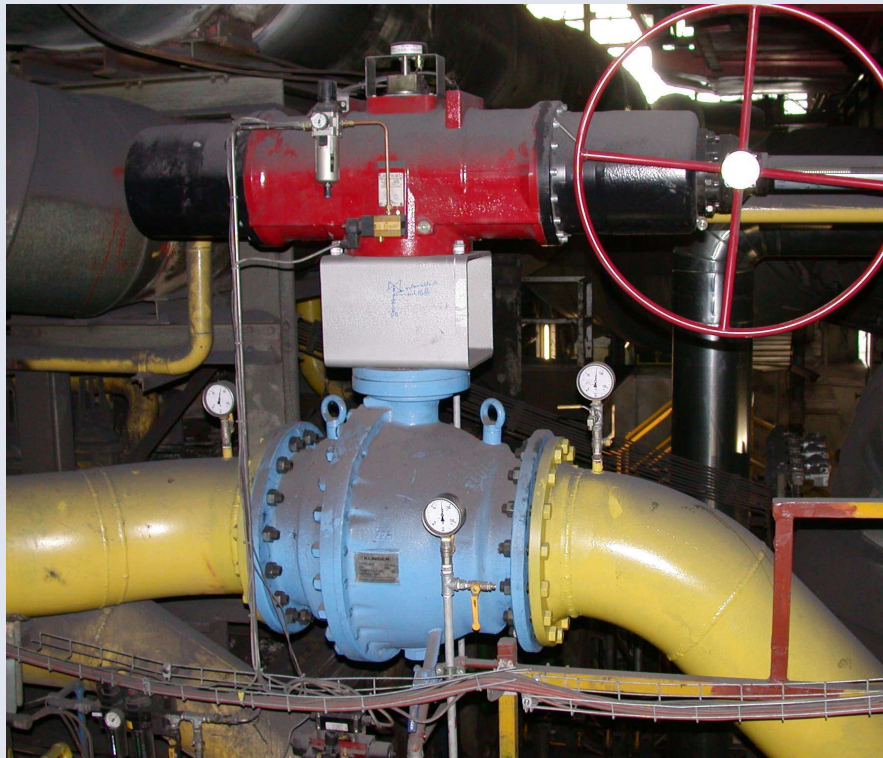
APPLICATION: OIL & GAS

Storage and transportation of hydrocarbons



APPLICATION: STEEL INDUSTRY

Transportation of oxygen, slurries and dust



APPLICATION: PULP & PAPER

Black Liquor

